

# PATENT COOPERATION TREATY

(sc. 09.02.06)

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

To:

see form PCT/ISA/220

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/B2005/051145

International filing date (day/month/year)  
07.04.2005

Priority date (day/month/year)  
09.04.2004

International Patent Classification (IPC) or both national classification and IPC  
G01N1/22

Applicant  
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#### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☐ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

#### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

#### 3. For further details, see notes to Form PCT/ISA/220.

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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

**10/594656**  
**IAP2 Rec'd PCT/PTO 27 SEP 2006**  
International application No.  
PCT/IB2005/051145

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**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

1. Reference is made to the following documents:

D1: GB-A-1 445 061 (BECKMAN INSTRUMENTS INC) 4 August 1976 (1976-08-04)  
D2: US-A-4 336 722 (SCHWEITZER ET AL) 29 June 1982 (1982-06-29)  
D3: DE 44 30 378 A1 (ERWIN SICK GMBH OPTIK-ELEKTRONIK, 79183  
WALDKIRCH, DE) 29 February 1996 (1996-02-29)  
D4: CA-A1-2 196 846 (GOODFELLOW TECHNOLOGIES INC) 5 August 1998  
(1998-08-05)  
D5: US-A-3 938 390 (GREY ET AL) 17 February 1976 (1976-02-17)

**Objections pursuant to Article 6 PCT**

2. The following objections with respect to clarity and/or conciseness of the claims should be noted.

- 2.1 The current wording *can be coupled to a probe according to any proceeding claim* employed in claim 11 leaves the reader in doubt whether the system defined actually is coupled to the said probe and whether the probe is an integral part of the system. Therefore, it is not clear, whether the features of the probe could have been used to define the system. Furthermore, it is not clear whether claim 11 should be considered as an independent apparatus claim or a claim dependent on claim 1.

Hence, in order to fulfill the requirements of Article 6 PCT, either the subject-matter of claim 11 should not have been defined in terms of the features of the probe or, if the probe should be considered as an integral part of the system then claim 11 should have been correctly, that is with an unambiguous wording, formulated as a claim dependent on claim 1 since it would contain all the features of claim 1.

- 2.2 The term *gas take off system* used in claim 1, having no generally accepted unambiguous meaning, is not clear and leaves the reader in doubt considering the technical features to which it refers. Accordingly, the subject-matter of claim 1 does not fulfill the requirements of Article 6 PCT with respect to clarity.

2.3 The wording *operable to inject the said gaseous fluid into the interior of the cavity (CA) accelerated towards the said aspiration opening of the first tubular element (2) and from there again into the process environment* is completely unclear as *the said gaseous fluid* has not been previously referred to and the wording would appear to define that the cavity is accelerated towards the opening. The definition should have been clarified in order to fulfill the requirements of the Article 6 PCT with respect to clarity.

Furthermore, claim one refers to *the first tubular element* although there has been no previous reference to *the first tubular element*.

2.4 Claim 2 refers to *the said accelerated gaseous fluid* which has not been previously defined. Accordingly, claim 2 does not fulfill the requirements of Article 6 PCT with respect to clarity.

2.5 The scope of protection of claim 3 is rendered unclear by the use of the term *nozzle* as it is not clear, the term being very broad, to which technical features the term refers to leaving the intended limitation open to question. Accordingly, claim 3 does not fulfill the requirements of Article 6 PCT with respect to clarity.

2.6 Claim 12 defines a *common continuous cycle machine*. This definition renders the scope of protection of the claim unclear, as the term *common* employed is relative and its supposed limiting effect is not clear. Furthermore, the means for re-injecting the gas would not appear to be a continuous cycle machine, since the gas aspirated, compressed and re-injected does not do so in a closed circulation. Accordingly, claim 12 does not fulfill the requirements of Article 6 PCT with respect to clarity.

2.7 The reference sign O<sub>2</sub>-CO-NO<sub>x</sub> referring to the analyser means in claim 15 does not appear to be merely a reference sign but also define technical features of the means. Consequently, it is unclear whether the features added to the reference signs are limiting or not. Accordingly, in order to fulfill the requirements of Article 6 PCT, the reference sign should have been omitted from the claim.

**Objections pursuant to Article 33(2) PCT (Novelty)**

3. Document D1 discloses a probe (12) for extracting gases from a process environment comprising
- a first tubular element (10), which can be positioned within the process environment, the element having at one end a gas aspiration opening and defining an internal cavity; and
  - injection means (21) coupled to the first tubular element (10), operable to inject a gaseous fluid towards the aspiration opening into the process environment.

See Figure 1 and page 2, lines 11-25.

Accordingly, the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT.

- 3.1 The injection means (21) of D1 comprise a second tubular element extending within the cavity of the first tubular element (10), the second tubular element being formed in such a way as to inject the gaseous fluid towards the aspiration opening and into the process environment, see Figure 1. Accordingly, the subject-matter of claim 2 is not new in the sense of Article 33(2) PCT.
- 3.2 The end of the second tubular element (21) of D1 is provided with a nozzle, see Figure 1. Accordingly, the subject-matter of claim 3 is not new in the sense of Article 33(2) PCT.
- 3.3 The first (10) and second (21) tubular elements of D1 are coaxial, see Figure 1. Accordingly, the subject-matter of claim 4 is not new in the sense of Article 33(2) PCT.
- 3.4 Document D1 further discloses a system coupled to the probe, comprising means (14) for aspirating the gas from the process environment through the first tubular element (10) of the probe and means (14) for re-injecting the gas into the process



environment through the injection means (21) of the probe. See Figure 1 and page 2, lines 11-25. Accordingly, the subject-matter of claim 11 is not new in the sense of Article 33(2) PCT.

- 3.5 The means for aspirating the gas in D1 comprise a pump (14) for conferring pressure and kinetic energy on the gas. Accordingly, the subject-matter of claim 12 is not new in the sense of Article 33(2) PCT.
- 3.6 The system of D1 further comprises means (18,19), connected to said aspiration means and analysing means for analysing the gas (14), for taking off a fraction of the gas, see Figure 1. Accordingly, the subject-matter of claim 15 is not new in the sense of Article 33(2) PCT.
4. For the sake of completeness, it should be noted that the objections as to the novelty of at least claims 1 and 11 could as well have been carried out using documents D2 or D3.

**Objections pursuant to Article 33(3) PCT (Inventive step)**

5. Dependent claims 5-10, 13-14 and 16-17 would appear to define minor modifications to the apparatus. These modifications are either well known in the art (eg. cooling of the probe, see documents D4 and D5) or merely workshop modifications. Hence, the person skilled in the art would carry them out in accordance with the circumstances without having to exercise any inventive skill whatsoever. Accordingly, the subject-matter of the above-mentioned claims does not contain an inventive step in the sense of Article 33(3) PCT.

**Further observations on the form and content of the international application**

6. In addition to the objections above, the following should be noted.
- 6.1 Independent apparatus claim is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with those features

known in combination from the prior art being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

- 6.2 Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1-D5 is not mentioned in the description, nor are these documents identified therein.